

Glaucoma

Increased Fluid Pressure in the
Eye Causing Loss of Side Vision



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Glaucoma, one of the leading causes of blindness, is estimated to affect 1 of every 50 adults. Although glaucoma can occur at any age, the risk of developing the disease increases dramatically after the age of 35. Glaucoma is also more likely to develop in persons who are severely nearsighted, persons with a family history of the condition, diabetics and blacks. Because the symptoms of early glaucoma are so slight, the disease often goes unnoticed until permanent vision loss has occurred. However, with early diagnosis and careful treatment, visual damage from glaucoma can be prevented.

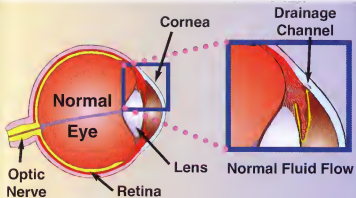
What is glaucoma?

Glaucoma is a series of diseases which damage the optic nerve. Damage to the optic nerve and retina causes blind spots in the field of vision. If the entire nerve is destroyed, blindness will occur. When light enters the eye, an image is focused onto the retina, the delicate nerve layer lining the inside back wall of the eye. The retina then transforms the light images into electrical impulses which are carried to the brain by the optic nerve.

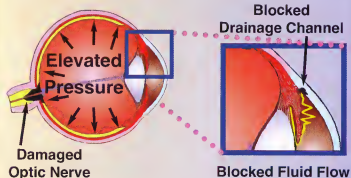
What causes glaucoma?

Glaucoma is usually caused by an increase in the fluid pressure in the eye. The front part of the eye contains a clear, nourishing fluid called the aqueous which constantly circulates through the eye. Normally, this fluid leaves the eye through a drainage system and returns to the blood stream.

Glaucoma occurs from an overproduction of fluid or when the drainage system becomes blocked, causing fluid pressure to increase. The high pressure causes damage to the optic nerve, resulting in permanent vision loss. The exact reason the fluid system in the eye stops functioning properly is not completely understood. Much research is being done in this area to further our understanding of glaucoma.



When the drainage channel is open, nourishing eye fluid flows into and out of the eye, and pressure remains normal.



Blocked fluid flow results in glaucoma.

What are the symptoms of glaucoma?

The early symptoms associated with chronic open angle glaucoma, the most common type, are usually unnoticeable. At first, in most cases, the build up of pressure is gradual



TYPES OF GLAUCOMA

Type	Cause/Effect	Symptoms	Comments
Chronic Open Angle Glaucoma	Gradual blockage of drainage channel Pressure builds slowly	Gradual loss of side vision Affects side vision first	This type of glaucoma progresses very slowly and is a lifelong condition.
Acute Closed Angle Glaucoma	Total blockage of drainage channel Sudden increase in pressure	Nausea Blurred vision Severe pain Halos around lights	This condition constitutes a medical emergency, as permanent blindness occurs rapidly without immediate treatment.
Secondary Glaucoma	Injury, infection, tumors, drugs, or inflammation cause scar tissue which blocks the drainage channel	Gradual loss of side vision Affects side vision first	This form of glaucoma may progress slowly, as in cases of chronic glaucoma.
Congenital Glaucoma	Fluid drainage system abnormal at birth	Enlarged eyes Cloudy cornea Light sensitivity Excessive tearing	This condition must be treated soon after birth if vision is to be saved.

without any discomfort or pain. Most people do not detect a change in their vision until substantial sight loss has occurred. Certain parts of peripheral (side) vision are affected first with the top, sides, and bottom of the field of vision becoming decreased. Later in the course of the disease central vision becomes affected, mild headaches and difficulty with night vision might be experienced. And if left untreated, total blindness will result.

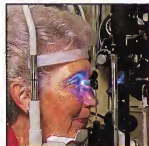
The patient stricken with acute closed angle glaucoma experiences more noticeable symptoms. The sudden onset of acute glaucoma can cause blurred vision, severe pain, nausea, and halos around lights. Congenital glaucoma also presents noticeable symptoms in the infant such as enlarged eyes, cloudy cornea, light sensitivity, and



Blurred vision, pain, nausea,

How is glaucoma diagnosed?

In most cases, glaucoma is detected in a routine eye examination before the patient experiences any vision problems. An evaluation for glaucoma is painless and includes checking the pressure or "hardness" of the eye with a tonometer. The optic nerve is checked for damage with an ophthalmoscope, an instrument which illuminates and magnifies the back of the eye. A special mirrored magnifying lens called a gonioscope is used to examine the drainage channels for proper fluid outflow. If any sign of glaucoma is detected, the patient's field of vision is tested for blind spots and any shrinkage in peripheral (side) vision.



A tonometer measures the pressure inside the eye.

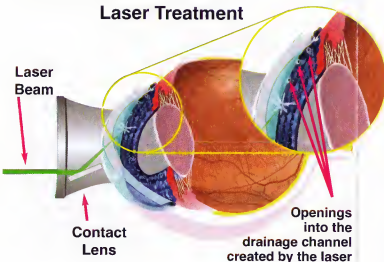
How is glaucoma treated?

With early detection and treatment, glaucoma can almost always be controlled and vision preserved. However, glaucoma cannot be cured and once vision has been lost it cannot be restored. A combination of eye drops, medication, laser treatment and conventional surgery is used to treat glaucoma. Treatment is concentrated on lowering the pressure inside the eye to prevent damage to the optic nerve.

The most common treatment for glaucoma is the use of medications in the form of eye drops and pills. Some medications allow for faster drainage of fluid from the eye, while others reduce the production of fluid.



Laser Treatment



Because medications and eye drops can cause undesirable side effects or simply fail to control glaucoma, alternative methods of treatment may be needed. In some cases, laser treatment is performed to control glaucoma. A laser is used to improve drainage and reduce fluid

pressure. If these methods fail to decrease fluid pressure, conventional surgery may be required to create a new drainage channel.



Visual field testing is used to detect the extent of vision loss from glaucoma. It plays an important part in glaucoma detection, management and treatment.

Treatment of glaucoma is usually a lifelong process. Glaucoma management requires frequent monitoring and constant treatment. Since there is no way to determine if glaucoma is under control based on how a person feels or their vision, a person with glaucoma generally should be examined every 3 to 4 months for the rest of their lives.

Prevention is the best medicine

Vision loss from glaucoma is permanent but can usually be prevented with early detection and treatment. Consequently, since the symptoms of the disease are often unnoticeable, **regular eye examinations are important**, especially for persons over the age of 35 or those in high risk groups.

If you have experienced a loss of peripheral vision or are having other difficulties with your vision, you should obtain a complete eye examination.